

Prof. Watson's planet with that of which Leverrier has indicated the track, he believes he has shown that there is no incompatibility between the observed and hypothetical objects. If only one such planet exist between Mercury and the sun M. Gaillot points out that, in order to account for the accelerated motion in the perihelion of Mercury, its mass must be nearly equal to that of the latter—an inference drawn from Leverrier's table in vol. v. of the *Paris Annales*. An ephemeris extending to September 1 is appended to M. Gaillot's communication in the *Comptes Rendus* of August 5. Remark that the assumed sidereal period of Prof. Watson's planet is 24.25 days, the synodical period is nearly twenty-six days, and accordingly we find by the ephemeris that the body should pass nearly at the same distance in longitude and latitude from the sun on August 24. But considering that this must hold during the next revolution whatever the period of any possible intra-Mercurial planet may be, it may be suggested that the most effectual plan of search will be to watch daily the vicinity so indicated with our larger instruments beyond the period at which the hypothetical planet should pass according to M. Gaillot's ephemeris. To set the equatorial it will be sufficient to subtract 9m. 50s. from the sun's right ascension at the proposed time of search, and to add to the sun's N.P.D. a quantity varying from 23' on August 22, to 17' on September 10.

A COMPANION OF α LYRÆ.—On several occasions during the last ten years, to our knowledge, attention has been directed to a star near α Lyræ in the *n. f.* quadrant, and suspicion of variability entertained, from the observer not having distinctly remarked it previously. An inquiry on the same point was lately addressed by a correspondent to Prof. Winnecke. The star is on an angle of about 42° , distance 139". In October, 1870, it was a full magnitude fainter than the well-known Herschelian companion. Possibly some reader interested in the variable stars may be able to say if there is any reason to include the more distant star in this class of objects. In due course the direction of the proper motion of the large star will bring it immediately upon this *comes*, supposing there be no physical connection.

SCHMIDT'S "CHARTER DER GEBIRGE DES MONDES."—We hope next week to give some account of this most laborious and valuable work, which has been produced, through the liberality and scientific spirit of the Prussian government, in a style and with a perfection of arrangement that reflect the highest credit on all concerned. Probably no astronomical work could possess a greater degree of interest for amateurs generally, and—considering the attention paid to the examination of the moon's surface in this country—to British amateurs especially.

GEOGRAPHICAL NOTES

THE Arctic exploring ship *Alert* is being again fitted out for active duty, under the command of her old captain, Sir George Nares. She is intended for a voyage of surveying service principally in the South Pacific. Her first work will be an examination of the inner water leading from the Straits of Magellan to the Gulf of Peñas, along the seaboard of Chili; from this she will stretch across the South Pacific Ocean towards Fiji adding (*en route*) as far as practicable to our knowledge of the hydrography of the Low Archipelago, Society and Friendly Islands. After a few months spent in the neighbourhood of Fiji and in an examination of dangers lying in the track of navigation between that group and the Colony of New Zealand, she will, for the latter part of her voyage, be employed off the North Western Coast of Australia, principally in ascertaining the positions of, and as far as necessary charting, the various reefs and islets lying off the Australian continent, and between it and the ports of the Dutch Indies, at many of which reefs, &c.,

traffic has been for some time increasing in the search for trepang, pearls, and guano.

THE *Mittheilungen* of the Vienna Geographical Society, Nos. 6 and 7, contains a valuable "Culture-Map" of Asia Minor, exhibiting in a satisfactory manner the various zones of vegetation which mark that region recently brought into such intimate relations with this country. The map is by A. v. Schweiger-Lerchenfeld, who contributes also the explanatory text. Dr. Ziegler describes the important works carried on during 1877-8 by the Swiss correspondents of the Society, and Prof. Schmick contributes a paper on Ocean Currents.

FROM America we have No. 2, 1878, of the always interesting *Bulletin* of the American Geographical Society. A paper on "Japan, Geographical and Social," by the Rev. W. E. Griffis, contains the results of much research, as well as of personal observation, and is an important contribution to our knowledge of that country. Dr. Wright Hawkes discusses in an able and unprejudiced manner "The So-called Celtic Monuments of Brittany," his conclusion being that the evidence as to their origin is very conflicting. Mr. Jess Young, who was astronomer to Giles's trans-Australian expedition, gives an account of the results of his observations while crossing the great Australian desert.

THE Geographical Society of St. Petersburg intends to publish Karl Ritter's works in Russian in celebration of his jubilee.

WE learn that a new branch of the Russian Geographical Society, independent of those of Orenburg and Western Siberia, will shortly be opened at Tashkent.

WE have received from Williams and Norgate a neat and well-executed map of Cyprus, by Kiepert of Berlin, upon a sufficiently large scale to show distinctly the chief features of the island.

NOTES

PROF. MENDELÉEFF is to be absent from his post in the St. Petersburg University for a year for the purpose of visiting Western Europe, where he will devote his time to the preparation of a large work on aeronautics. The work will contain a historical sketch of the subject, and expound its present condition from a scientific point of view.

THE appearance is announced of a biography of the late Prof. von Baer, by Dr. Stida, Professor in the Dorpat University. The autobiography of Baer appeared some years before his death, but embraced only his childhood and youth. The work of Dr. Stida is chiefly devoted to the scientific life of Baer, and contains a complete review of his works.

WE are glad to see that the *Times* is beginning to recognise the national importance of science-teaching in schools, and the necessity for our legislators being able to estimate the bearings of the various problems in physical science which are involved in the measures that come before them, in which the national welfare is involved. In a leading article on the meeting of the British Association the *Times* says that "We are living in a time when legislation is busy with physical matters, and is likely to become more so. The tendency of unscientific persons, especially when they are politicians, is to ignore the certainties which physical science furnishes, and hence to suppose that legislation about physical matters may properly be conducted upon a basis of compromise, like legislation about matters of opinion. It is very important that people who are not scientific themselves, and who never will be, should yet possess enough scientific knowledge to understand the difference which separates questions on which compromise is proper or expedient from those in which it would be fatal to the attainment of the desired result." The *Times* seems to us in-

clined to rate too highly the educational influences of the British Association on our legislators and on the general public. The rational conclusion to be drawn from the admissions in the passage we have quoted is that there ought to be some kind of scientific council which Government could consult in regard to measures involving questions of science. The British Association has done good service in helping to draw the attention of the public to the real nature of science, but it can never be a substitute for such a council as that which the most eminent of our men of science maintain would be the only effectual guarantee for enlightened legislation in scientific matters, and the establishment of which was recommended by the Duke of Devonshire's Commission. It is gratifying to find that the *Times* admits that "physical science affords an admirable means of mental training in schools," and we trust the day is not distant when it will be placed on a footing of equality with other branches of education. From another leader on Prof. Huxley's address we may infer that this chief representative of average British opinion has advanced from its obstinate opposition to the doctrines associated with the name of Darwin; indeed, the tone of the article to which we refer seems even more "advanced" than the address which was the occasion of it. It is comforting to find that, in scientific matters, at least, a better spirit is beginning to pervade the paper which is both an index and a leader of middle-class public opinion.

THE time of meeting of the German Naturalists and Physicians at Cassel has been changed from September 18-24 to September 11-18. This change has been caused by the fact that during the time originally fixed a series of military manoeuvres are to take place which will cause a great influx of military men into Cassel, the lodging resources of which, it is feared, would not be commensurate with the requirements of a simultaneous meeting of the men of science and of war.

THE meeting of the French Association will not take place at the Palais des Beaux Arts, as it was originally contemplated, but in the rooms of the Lycée Saint Louis. The session begins to-day.

A SOMEWHAT curious discussion has been recently occupying the attention of the Paris Academy of Sciences. It originated in the publication by M. Berthelot, in the *Revue Scientifique* of July 20, of a series of laboratory notes by the late Claude Bernard, on alcoholic fermentation, in which the great physiologist came to conclusions opposed to those so long advocated by M. Pasteur. It was natural that M. Pasteur should endeavour to weaken the force of M. Bernard's experiments and conclusions. In the *séance* of July 22 he drew attention to the publication of the notes, and explained their apparent opposition to his theory by the statement that Bernard's method of working was to proceed to the investigation of every theory as if its opposite were true, thus submitting every point to a crucial test. He declared his intention of taking up Bernard's series of experiments and working them out from the latter's standpoint, in the confidence that the result would be entirely in favour of his (Pasteur's) theory of fermentation. At the next sitting of the Academy M. Pasteur stated that he had found that many changes had been made for typographical and other reasons in the notes as they appeared in the *Revue* as compared with the original MSS., though these changes do not seem materially to alter the sense of the "Notes." M. Berthelot rejoices that M. Pasteur intends to repeat Bernard's experiments, and whatever may be the result, science is likely to be a gainer. There at present the matter rests.

WE notice the death in Jena, on July 25, of the well-known botanist Prof. Christian Eduard Langethal. He was born at Erfurt in 1806. After completing his botanical studies at Jena he was for some time assistant to the famous agriculturist Prof. Schulze, and in 1835 teacher of natural sciences at Eldena. In

1839 he was called to a professorship at Jena, which he occupied up to the date of his death. Prof. Langethal was the author of several standard works, among others, "*Geschichte der deutschen Landwirthschaft*" (1846-56); "*Lehrbuch der landwirthschaftlichen Pflanzenkunde*" (1841-45; fifth edition, 4 vols. 1876); "*Beschreibung der Gewächse Deutschlands*" (1858); "*Terminologie der beschreibenden Botanik*," and "*Flora von Thüringen*," issued in conjunction with Schenk and Schlechtendal.

THE model of the Gauss monument has just been finished by Prof. Schaper. The design is made after an original portrait of Gauss, in the possession of Göttingen University, and the monument itself is now to be executed in bronze at the atelier of Herr Gladenbeck, of Berlin. It will be erected at Brunswick, the birthplace of the great mathematician.

THE Royal Academy of Sciences at Munich has just elected to membership Prof. Krehl, of Leipzig, and Mr. Charles Darwin.

MEASURES are being taken for the foundation of a geological institute at St. Petersburg, which shall accomplish for the Russian empire what the Imperial Institute at Vienna has done for Austria. At present geological work is attempted only at the instigation of mining companies and the learned societies, and the want of unity in the efforts made for the development of Russian geology has long been painfully felt.

THE French Minister of Public Instruction has authorised the director of the newly created Central Meteorological Bureau to hire a hotel in the Rue de Varenne, in a populous part of Paris, where no observations can be taken, in which to establish the offices of his administration, which, within a few days, will be removed from the observatory. It is fair to state that Admiral Mouchez will not discontinue the taking of meteorological observations with the instruments established by Arago. It is pretty certain that the magnetical instruments established at a great expense by Leverrier will not be removed at a period so important in the history of terrestrial magnetism. We can state that new observers will be paid for that purpose, if necessary.

THE Meteorological Commission of Vaucluse again this year ascended Mont Ventoux. M. Mascart, the new director of the Meteorological Central Bureau, was one of the party, having come from Paris for that purpose. Simultaneous observations were taken at Orange, Carpentras, Avignon, and Apt. But the principal object of this scientific excursion was to determine the best manner of erecting the contemplated observatory at the top of this mountain, which is 1,919 metres above the level of the sea, and 1,692 above Apt, the nearest meteorological station.

THE Giffard captive balloon has become a great favourite amongst the visitors to Paris, as well as the Parisians themselves. The greatest number of ascents in one day has been seventeen, and the money taken has been 6,000*fr.* in eighteen days, including three in which ascents could not take place, owing to the boisterous state of the weather. The charges are one franc for witnessing the ascents, and twenty francs for ascending.

THE Lords of the Committee of Council on Education have determined to award bronze medals to students who obtain a first-class in honours in any subject of science at the May examinations.

IN an Appendix to the Annual Report (for 1878) of the Lyceum of Valparaiso, Mr. Edwyn C. Reed gives an account of the progress he has made in commencing a Museum of Natural History for this Institution, which, if we understand rightly, is not intended to be simply for the instruction of the scholars of

the Lyceum, but for the City of Valparaiso generally. The new Museum does not appear to be well off for funds, but Mr. Reed has many friends and correspondents in this country who will be able to serve him by exchanges.

THE second marine excursion of the Birmingham Natural History and Microscopical Society to the Island of Arran, in the month of July last, proved most successful. Twenty-eight members, including six ladies, formed the party, who travelled by Pullman cars and family carriage by Midland railway, going by night and returning by day. A small steam yacht—the *Lizzie*—was chartered for a week. There were also botanical and geological excursions daily to the many interesting parts of the island. The results of the dredgings were most satisfactory, and a beautiful series of specimens was taken, including *Luidia fragillissima* and two or three Nudibranchs new to the locality. The towing-net—on an improved principle, devised by Mr. Henry Allport—was also used most successfully, and many interesting forms of marine life taken, notably *Bipinnaria* and *Pluteus*. The examination of these and other microscopic objects in the evenings in the ladies' drawing-room proved a great attraction. Preliminary reports have been made to the society and the specimens exhibited:—General, by Mr. Edmund Tonks, B.C.L., president, and Mr. Sam. Timmins, F.R.S.L.; Botanical, by Mr. John Morley, hon. sec.; Dredging Arrangements, Mr. John F. Goode; and Marine Zoology, by Mr. W. R. Hughes, F.L.S. The Geological Report, by the Rev. George Deane, D.Sc., F.G.S., was deferred. A full account of the proceedings will appear in an early number of the *Midland Naturalist*. The excursion extended from July 19 to 27, and a most interesting and enjoyable week was passed. A resolution was unanimously passed suggesting to the society that the next excursion should be to Falmouth.

WE have on several occasions drawn attention to the interesting department in the Paris Exhibition devoted to school equipments, and it is hopeful to find that in connection therewith, a *Times* Paris correspondent has discovered the success of the French in their efforts to impart to the nation a technical education. "One of the most interesting and instructive departments of the Exposition," the *Times* correspondent writes, "is that devoted to the illustration of the working and results of the system of French popular education both in Paris and in the Provinces. The foreign visitor who observes with admiration throughout the country the evidences of the general artistic and technical skill of the French workmen of every class will see in this Educational Department of the Exposition the key to the secret of that success. When will the corporation of London be able to match the interesting educational results here displayed by the sister municipality of Paris?"

UNDER the presidentship of Lord Hardwicke the opening meeting of the thirty-fifth annual congress of the British Archaeological Association began on Monday at the ancient town and port of Wisbech.

ZOOLOGISTS will be glad to know that the "Rules for Zoological Nomenclature," drawn up by the late H. E. Strickland, F.R.S., at the instance of the British Association, have been reprinted. The "Notes" were prepared after consultation with many zoologists, British and foreign, and are now brought out under the care of Mr. P. L. Sclater. The publisher is Mr. Murray.

PROF. BROCA opened the International Congress of Anthropology at the Paris Exhibition by a short address, in which he pointed out the necessity of rigid observation as the only means of obtaining trustworthy data on which to build the science.

WE are glad to learn that the French balloon service has not been disorganised by the resignation of Col. Laussedat. The

new head of the service is General Farr, who distinguished himself in the last Franco-German war in the northern part of France.

DR. ERNST, of Carácás, writes us that by an oversight in his note on the earthquake of Cúa (*NATURE*, vol. xviii. p. 130) the direction of the shock was not given. It came from E.N.E., or more exactly E. 15° N.

THE article on the Elasmotherium from which our description was obtained (vol. xviii. p. 387) appeared in No. 23 of the Russian journal *Niva* for 1878, p. 411.

THE additions to the Zoological Society's Gardens during the past week include a Lion (*Felis leo*), a Patas Monkey (*Cercopithecus ruber*) from West Africa, presented by Mr. W. H. Wyld, s. s. *Agra*; a common Paradoxure (*Paradoxurus typus*) from India, presented by Mr. Edwin Etty Sass; two Common Buzzards (*Buteo vulgaris*), European, presented by Master Valentine Marks; two Herring Gulls (*Larus argentatus*), European, presented by Mr. Thomas Landseer; a Crested Ground Parakeet (*Calopsitta novae-hollandiae*) from Australia, presented by Mrs. Parker; a many-zoned Hawk (*Meiastur polyzonus*) from East Africa, presented by Mr. C. H. Fisher; a Copper-head Snake (*Cenchrus centortrix*) from Pittsburg, U. S. A., presented by Dr. F. Painter, F.Z.S.; a Macaque Monkey (*Macacus cynomolgus*) from India, two Barbary Apes (*Macacus inuus*) from North Africa, two Beautiful Parakeets (*Psephotus pulcherrimus*) from Australia, thirteen Greek Land Tortoises (*Testudo graeca*) European, deposited; a Bladder-nosed Seal (*Cystophora cristata*) from the North Atlantic, six Common Kingfishers (*Alcedo isipida*) British Isles, purchased.

THE BRITISH ASSOCIATION

DUBLIN, Tuesday.

SINCE we last wrote the British Association week has come and gone with even more than its wonted rush and whirl of incessant engagements. That the meeting has been a successful one in every respect is unquestionable. Though no very original papers have been read or any great sensation excited in any section, as at Plymouth, by the telephone, yet the meetings have been above the average in general interest, the evening lectures and entertainments having been specially attractive, and the attendance extremely good. This meeting will always be memorable for the splendid address of the president, Dr. Spottiswoode.

The proceedings have been very fairly and fully reported in the local papers. Is it too much to hope that, ere long, the Association may see its way to utilising the energy now invariably displayed by the provincial press in giving to its members an early, full, and revised report of the proceedings of the meeting in a more convenient form than in the columns of a newspaper? We are aware that this question has often been mooted, and indeed it has not been untried, but for its permanent success a well-considered scheme is necessary, and doubtless the local press, as well as the sectional secretaries (more especially if some honorarium were attached to one secretary in each section) would gladly lend their aid. If we may judge by the constant inquiries for such a report that reach our ears at each meeting of the Association, it would seem to be a widely-felt want. Our own columns have, to a large extent, been opened to meet this need; but it is obvious that the constant pressure upon our space only permits a partial report of the proceedings, whilst the discussions upon the papers, often extremely valuable, have no permanent record, even in a condensed form.

There is another point upon which we may venture to say a word or two, and that is, the desirability of giving a little more attention to the fact that a large majority of